

MEMORANDUM OF AGREEMENT
Between the
Federal Aviation Administration (FAA)
William J. Hughes Technical Center (WJHTC)
and the
National Aeronautics and Space Administration (NASA)
Langley Research Center (LaRC)
Concerning

**National Airspace Systems Research
and Technology Development**

I. Purpose

This Memorandum of Agreement (MOA) establishes a collaborative working relationship between the NASA Langley Research Center (hereinafter referred to as "Langley") and the FAA William J. Hughes Technical Center (hereinafter referred to as the "Technical Center") supporting the development of research and technology for the FAA National Airspace System (NAS). This MOA is established under the existing FAA/NASA Memoranda of Understanding (MOUs) concerning Aviation Safety Research (FNA 08) dated July 2, 1999, and Airspace System User Operational Flexibility and Productivity (FNA 07), dated September 11, 1995.

II. Background

The FAA and NASA have a long history of collaborating on research activities in the development of products for the NAS. The Technical Center and Langley are part of that long history. Each center contributes to this collaboration by using its own unique national facilities and capabilities to perform and validate aeronautics-related airborne and ground research.

This MOA establishes a closer, integrated working relationship between the two centers to enable each to more effectively collaborate in using their facilities, capabilities, and resources in the development of new technologies for the NAS. The MOA will also facilitate the development of new relationships to more effectively utilize each center's capabilities and limited resources. These new relationships will include, but not be limited to, temporary assignment of personnel between the centers in support of activities of mutual interest.

III. Objective/Scope

The objective of this MOA is to establish the working relationship by which tasks can be defined and resources authorized for the most effective mutual use of Langley and Technical Center facilities and capabilities in the research and development of new technology products for the NAS. Primary emphasis will be on, but not limited to, the areas of safety and air traffic technologies, to include the NASA General Aviation/Advanced Aviation Transportation Experiments (AGATE) and Small Aircraft Transportation System (SATS) programs.

The scope of this MOA includes:

- cooperation and collaboration on research activities of mutual interest,
- interagency use of major facilities at the Technical Center and Langley (including networked simulation and flight facilities),
- agreements for temporary assignment of personnel between centers,
- funding approaches and authorizations (including transfer of funds between centers), and
- working relationships with contractor teams.

IV. Statement of Work

NASA and the FAA will focus on defining tasks to meet the overall goals/objectives of this MOA and on ensuring a coordinated series of activities that will lead to a greater continuity and more efficient transition of technologies from the concept R&D phase to product/system development and deployment in the NAS. The following elements define the scope of this MOA:

A. TASKS

Tasks will be defined and plans will be developed in coordination and agreement between the Technical Center and Langley as specified below:

1. Research tasks/opportunities in the areas of aviation safety and airspace systems will include, but not be limited to:
 - Flight Systems,
 - ATC System Interfaces,
 - Weather Hazards,

- Sensors and Controls,
- Integrated Platforms,
- Flight Training,
- AGATE/SATS Concepts, and
- NAS System Infrastructure.

Collaboration on activities associated with the above research will include program analysis, program management, and systems assurance.

2. Development, assessment, and validation of new technology may be performed by either center or jointly, as deemed appropriate.
3. Field trials conducted at NASA experimental test sites or FAA operational facilities may be supported by either center or jointly, as deemed appropriate.
4. Resources of each agency may be loaned, transferred, or combined to meet the needs and requirements of a specific task. All such arrangements shall comply with appropriate FAA and NASA policies and procedures.
5. Appendix A of this MOA provides initial documentation for transfer of equipment, assignment of personnel, transfer of funds, or use of facilities. Documentation of future activities within the scope of this Agreement shall be in the form of an annex to this MOA and signed by the parties responsible for the specific resource.

FAA:

The FAA Technical Center shall be responsible for:

1. Assuming the lead when using Technical Center facilities for validation/assessment of new concepts and technologies, and when conducting field trials at other FAA sites.
2. Providing operational and National Airspace System (NAS) expertise, as appropriate, to support the development of new concepts and technology.

NASA:

NASA Langley shall be responsible for:

1. Leading research and validation/assessment of new concepts and technologies when activities primarily utilize Langley facilities.

2. Providing technical expertise, as appropriate, during validation/assessment when using the Technical Center facilities and during field trials.
3. Providing technical expertise, as appropriate, during transition of new concepts and technology to operational implementation.

B. RESOURCES

Personnel

Appendix A sets out the initial activities to be performed under this MOA. The FAA Technical Center will provide support services through the assignment of an FAA employee to NASA LaRC. These services will include, but not be limited to: representing the interests of the FAA Technical Center, serving as the principal point of contact for information to be exchanged between the Technical Center and LaRC, facilitating the transfer of technology between the centers and to others, as appropriate, and serving as the FAA Lead at LaRC for development and integration of the SATS concept in joint FAA/NASA planning.

Any additional personnel assignments shall be documented as specified in Section A above.

Funding

Planned funding allocations shall be documented in the development of the tasks as specified in Section A above. Each agency will be responsible for funding all the tasks within its area of responsibility. Resource commitments of each agency are subject to fund availability.

Facilities

The use of NASA and/or FAA airborne and ground facilities in the performance of the research tasks specified under this MOA shall be determined, in consensus, by both agencies and mutually agreed upon, as it relates to the specific task being performed. This shall be documented in the development of the tasks as specified in Section A above.

C. SCHEDULE

Schedules will be task specific and shall be determined, in consensus, by both agencies and mutually agreed upon, as it relates to the specific activity being performed.

V. Technical Representatives

The individuals listed below are responsible for the oversight of this MOA at their respective headquarters and/or centers; however, they do not have the authority to unilaterally alter any of the terms of this MOA. Any requests for changes must be made in accordance with Section IX of this document, "Modification, Amendments, Termination." The central point of interagency coordination and information for this MOA is the FAA R&D Field Office at NASA Langley Research Center, Hampton, Virginia.

FAA: Bruce M. Singer, Deputy Director, FAA William J. Hughes Technical Center,
, Phone: 609-485-6653, E-Mail: Bruce.Singer@faa.gov.

NASA: Ruth M. Martin, Associate Director, NASA Langley Research Center,
, Phone: 757-864-6114, E-Mail: r.m.martin@larc.nasa.gov.

Any disputes that may arise under this MOA will be resolved by the Technical Representatives in accordance and compliance with appropriate FAA and NASA policies and procedures.

VI. Dissemination of Information

The initial release of any information to the public, oral or written, concerning results or conclusions made pursuant to performance of this Agreement shall require prior written approval of the Technical Representatives, FAA and NASA, as named in Section V. Nothing in this section shall affect the obligation of either agency to comply with the requirements of the Freedom of Information Act, 5 U.S.C. 552.

Unless otherwise agreed by the parties, custody and administration of inventions made because of, or in direct relation to, the performance of activities under this MOA will remain with the respective inventing party. In the event an invention is made jointly by employees of both parties, or an employee of a party's contractor, the parties will consult and agree as to future actions toward establishment of patent protection for the invention.

In the performance of this MOA, both parties may have access to, be furnished, or use:

1. data of third parties that the disclosing party has agreed to handle under protective arrangements, or
2. government data, the use and dissemination of which, the government intends to control.

The receiving party agrees, with respect to any such third party or government data that is either marked with a restrictive legend, or specifically identified in tasks under this MOA, to:

1. use, disclose, and reproduce such data only to the extent necessary to perform the work required under this MOA,
2. allow access to such data only to those of its employees and contractors that require access for their performance in activities under this MOA,
3. preclude access and disclosure of such data outside the receiving party's organization, and
4. return or dispose of such data, as the disclosing party may direct, when the data is no longer needed for performance under this MOA.

The receiving party agrees to inform and instruct its employees and contractors to comply with the access, use, disclosure, and reproduction provisions of this clause. If the receiving party believes any event or condition has occurred that removes any restriction on the use, disclosure, and reproduction of the data, they shall promptly confirm this belief with the disclosing party before acting on such belief, and, in any event, shall give notice to the disclosing party before unrestricted use, disclosure, or reproduction of such data.

VII. Liability

Each Party agrees to assume liability for its own risks associated with activities undertaken pursuant to this MOA.

VIII. Period of Performance

The period of performance for this research agreement shall commence upon the effective date of the MOA and shall remain in effect for five (5) years.

IX. Modifications / Amendments / Termination

This MOA may be modified only upon the mutual written consent of both agencies. Modifications and annexes must be signed by the authorized representatives of the FAA and NASA, or their designees. No oral statement by any person shall be interpreted as modifying or otherwise affecting the terms of this MOA. After consultation with legal counsel, annexes to clarify the scope of this MOA may be attached to the Agreement if

deemed necessary and appropriate. Delineation of future tasks within the scope of this MOA will be documented as annexes.

Either agency may terminate this MOA 60 days after written modification of intent to terminate. Termination requires that the Technical Representative of the initiating party write a modification (Purpose only) stating the subject MOA is to be terminated, its identifying number, title, and effective date of termination. Upon termination, each agency will refund any portion of those funds that have been advanced, but not expended, in connection with the work specified in the MOA.

X. Authority

NASA

This MOA is entered into on behalf of NASA under the authority of 42 U.S.C. 2473(c)(5) and (6).

DOT/FAA

This MOA is entered into on behalf of FAA under the authority 49 U.S.C. §106(1)(6) and (m).

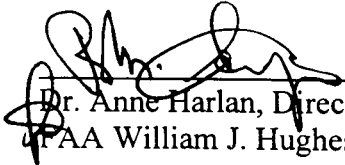
FAA/NASA Executive Committee

This cooperative agreement is further established under the agreement for cooperation between FAA and NASA concerning the FAA/NASA Executive Committee (*A Partnership to Achieve Goals in Aviation and Future Space Transportation*), signed by the Administrators on October 9, 1998.

AGREED

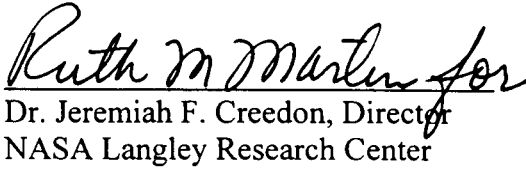
Department of Transportation
Federal Aviation Administration

National Aeronautics and Space
Administration



Dr. Anne Harlan, Director
of FAA William J. Hughes Technical Center

Date: NOV 7 2000



Dr. Jeremiah F. Creedon, Director
NASA Langley Research Center

Date: Nov 27, 2000